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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/046,233

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Hidefumi Sakata

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EXAMINER

MENGISTU, AMARE

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,233

Applicant(s)

SAKATA ET AL.

Examiner

Amare Mengistu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/18/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inou 6,078,274 in view of Raj et al. 6,326,723 B1 and Murakami Yukio (JP 407169367A).

In regard to claims 1, 8, 13 and 16, Inou discloses a touch panel that comprises a pair of substrates (one of which is flexible) opposing each other and having a predetermined spacing therebetween (See figure 1, elements 1 and 3. See column 4, lines 33-37, disclosing "the insulating substrate 1 and the flexible insulating substrate 3 are held 10Tm apart".), and a pair of transparent electrodes formed from a conductive material having a respectively predetermined pattern, each of the transparent electrodes being formed on an inner surface of each of the pair of substrates. See figure 1, elements 2a and 2b and column 4, lines 20-32, disclosing "an insulating substrate 1...on which is provided a transparent conductive film 2a...and a flexible insulating substrate 3...on which is provided a transparent conductive film 2b." It is understood that the two transparent conductive films are a pair of transparent electrodes, as they are both conductive layers that are formed of the same material (indium tin oxide) and are formed "substantially on the entire inner surfaces of the"

substrates. (See paragraph [0005] of the specification of the claimed invention.) Inou further discloses a plurality of projections formed from the surface of at least one of the pair of transparent electrodes, the projections being formed to have a substantially periodical pitch. See figures 1 and 2, element 8, figure 3, and column 4, lines 42-46, discloses that, "On the transparent insulating films 2a and 2b, antireflective films 8 are provided by. For example, offset printing, in the form, shown in FIG. 3, of square islets 100 nm thick, each with a pitch P_d of $100T_m$ ". Thus, and in regard to claim 13, these projections of the transparent electrode are formed on a flat substrate (see figure 1).

Inou further discloses that the projections may be formed from the same conductive material as the transparent electrodes. See figures 14-22 and column 2, lines 52-57, disclosing, "In order to attain the object mentioned above, another touch panel according to the present invention has a structure in which selected portions of at least one transparent conductive film are not provided with transparent conductive film (i.e., holes are selectively provided in the transparent conductive film)." Further, providing a projection made out of the same material as the transparent electrode upon the transparent electrode is functionally equivalent to providing a projection of another material on the transparent electrode and there is no disclosed criticality of having the transparent electrodes and projections be of the same material, since the immediate application discloses in paragraph [0043], "The projections 21 and 22 may be made of members different from those of the lower substrate 11 and the upper substrate 12. As shown in FIGS. 3 and 4, however, the projections 21 and 22 are preferably integrated with the lower substrate 11 and the upper substrate 12, respectively, so as to simplify

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the fabrication step for the projections 21 and 22.” Thus, the immediate application discloses forming the projections from the lower and upper substrates, not the transparent electrodes, further evidencing that there is no disclosed criticality of having the transparent electrodes and projections be of the same material.

Inou differs from the claimed invention in that the projections in Inou’s invention have a pitch of 50Tm at the smallest (see figure 8) and thus do not have a pitch “that is shorter than any wavelength of visible light.” Raj et al. discloses a plurality of projections (see figure 6, element 16) stating, in column 3, lines 21-22, “The elements 16 may be fabricated on planarized surfaces using a technique called holographic lithography which allows patterning by the interference. Feature sizes as small as 90 nanometers may be formed over large areas. Using this technique, moth-eye like surface relief array structures may be formed of an array of microscopic protrusions.” In column 4, lines 28-32, Raj et al. further discloses that “the moth-eye like elements 16 may have relatively small feature sizes. For example in one embodiment of the invention, those feature sizes can be on the order of 100 nanometers. This means that there will be numerous scattering centers of a small region.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Itou by making the projections have a pitch shorter than any wavelength of visible light, such as 100 nanometers, as disclosed by Raj et al. One would have been motivated to make such a change based on the teaching in column 3, lines 3-5, of Raj et al. to include a plurality elements for absorbing

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light on the substrate, as (see column 3, lines 13-14) such "light trapping reduces back reflections or glare".

Inou as modified by Raj et al. do not expressly detailed that the projections are provided on both faces of the transparent electrodes. However, the patent of Murakami Yukio (hereinafter Yukio) clearly suggests to provide a plurality of projections (7) on both top and bottom part of the transparent electrodes (6,8).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Yukio's to method of allocating the projection on both transparent electrode into the device of Inou, because this will provide a transparent touch panel with improved light interference.

3. In regard to claim 2, Inou discloses an air space being formed between the pair of transparent electrodes. See figure 1, element 6 and column 4, lines 33-37. Also see rejection of claim 1.

4. In regard to claim 3, 4 and 6 Inou in view of Raj et al. discloses an invention that is similar to the claimed invention. See the rejection of claim 1 for similarities. Inou does not disclose that the projections become continuously smaller from a bottom to a top thereof, as a cone. Raj et al. discloses, "A variety of shapes and sizes of the moth-eye elements 16 may be formed, including...the conical elements 16 shown in FIG. 5. These structures have low reflectance over large wavelength bands and angular acceptance ranges." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Inou in view of Raj et al. having the projections becoming continuously smaller from the bottom to the top, as a cone.

One would have been motivated to make such a change based on the teaching of Raj et al. that such a shape would have low reflectance and angular acceptance ranges, thus further increasing light transmittance.

5. In regard to claim 5, Inou in view of Raj et al. discloses an invention that is similar to the claimed invention. See the rejections of claims 1, 3, 4 and 6 for similarities. Inou does not disclose that the projections become smaller in a stepwise manner from the bottom to the top thereof. However, if the projections became smaller in a stepwise manner, and the steps were very small, then the projections would be becoming smaller in a continuous manner. Thus, the projections becoming smaller in a stepwise manner or continuous manner would be equivalents if the steps were small enough. Further, there is no disclosed criticality of the steps becoming smaller in a stepwise or continuous manner. Thus, change in form/shape is a design choice of no disclosed criticality. (Refer to *in re Dailey*, 149 USPQ 47 (CCPA 1976).)

6. In regard to claim 7, Inou further discloses that the plurality of projections is arranged with a substantially periodical pitch in at least two directions. Refer to figures 3-11, depicting various embodiments with intervals and pitches that are periodic.

7. In regard to claims 9 and 10, Inou discloses the plurality of projections is formed with the same pattern on both of the pair of transparent electrodes. See rejection of claim 1 and column 10, lines 26-30, which discloses that the foregoing embodiments may include such projections (which each have specific patterns of projections) on one or both of the conductive films. See figures 3-11, showing the patterns for the foregoing embodiments.

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8. In regard to claim 11, Inou discloses that the plurality of projections formed on the surface of one of the pair of transparent electrodes has a pattern different from that of the other transparent electrode. See column 10, lines 26-30, which disclose that the projections may be formed on only one of the transparent films. Thus, the pattern on this one film would be different than the pattern on the film without projections.

9. In regard to claim 14, Inou discloses a plurality of spacers positioned between the pair of transparent electrodes that maintain the spacing between the pair of transparent electrodes. See figures 2-3, element 4 and column 4, lines 28-37 disclosing spacers.

10. In regard to claim 15, Itou discloses that the touch panel is at least one of an analog resistive contact type, a digital resistive contact type, and an electrostatic capacitive coupling type. See column 1, lines 10-21, disclosing various types of touch panels to which the invention relates, including analog and digital resistive and capacitance-detecting.

11. In regard to claim 17, see rejection of claims 1, 16 and 14.

12. In regard to claim 18, see rejection of claims 1, 16 and 14.

Response to Arguments

13. Applicant's arguments with respect to claims 1-11, 13-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (571) 272-7674. The examiner can normally be reached on M-F,T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Amare Mengistu
Primary Examiner
Art Unit 2673

AM

3 September 2005